



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5B3/2P
UNIQUE ID NUMBER: 4CM038
COMBUSTOR: DAC-II
ENGINE TYPE: TF
BYPASS RATIO: 5.6
PRESSURE RATIO (π_{eo}): 32.8
RATED THRUST (F_{eo}) (kN): 142.4

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F _{eo} (g/kN) or SN	7.3	71.5	49.4	2.6
AS % OF ORIGINAL LIMIT	37.0	60.6	46.8	12.3
AS % OF CAEP/2 LIMIT (NO _x)			58.5	
AS % OF CAEP/4 LIMIT (NO _x)			68.1	
AS % OF CAEP/6 LIMIT (NO _x)			76.5	
AS % OF CAEP/8 LIMIT (NO _x)			88.7	

DATA STATUS

- PRE-REGULATION
x CERTIFICATION
- REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
x DEDICATED ENGINES TO PRODUCTION STANDARD
- OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
(ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
x OUT OF PRODUCTION (DATE: -)
- OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F _{eo})	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	1.470	0.10	0.60	32.00	0.5
CLIMB OUT	85	2.2	1.150	0.10	1.30	18.60	0.3
APPROACH	30	4.0	0.400	2.90	19.90	7.80	0.5
IDLE	7	26.0	0.130	2.50	34.50	4.30	2.3
LTO TOTAL FUEL (kg) or EMISSIONS (g)			512	807	9141	6420	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				4	4	4	4
AVERAGE D _p /F _{eo} (g/kN) or AVERAGE SN (MAX)				5.6	62.8	44.9	2.3
SIGMA (D _p /F _{eo} in g/kN, or SN)							
RANGE (D _p /F _{eo} in g/kN, or SN)				5.1-6	59.3-66.3	44.3-45.5	2.1-2.4

ACCESSORY LOADS

POWER EXTRACTION 0 (kW)
STAGE BLEED 0 (% CORE FLOW)

AT - POWER SETTINGS
AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.5-99.7
TEMPERATURE (K)	284.6-292.4
ABS HUMIDITY (kg/kg)	0.0081-0.0115

FUEL

SPEC	Jet A
H/C	1.93
AROM (%)	17.33

MANUFACTURER: CFM International
TEST ORGANIZATION: GEAE Peebles + Techspace Aero (CFMI)
TEST LOCATION: Peebles, Ohio + Liers, Belgium
TEST DATES: 01/08/1996-01/09/1996

REMARKS

1. DAC-II Combustor P/N 1968M99G04

Compliance with Fuel Venting requirements:

- ('x' if complies, 'PR' if pre-regulation,
'- ' if information is not available)